Design Envelope Series 6800 IVS

ARMSTRONG

Vertical In-Line MultiStage 6800
Intelligent Variable Speed Booster Systems

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Series 6800 IVS

The 6800 Intelligent Variable Speed Booster System

Description

- System configurations of 2- to 5-pumps with standby pump option
- Fully integrated Intelligent Variable Speed (IVS) booster system (controls, drives, pumps and motors)
- Stainless steel Vertical MultiStage pump (shaft, housing, impeller), cast iron casing on some larger pumps
- Custom configurations available
- Completely assembled, programmed, integrated and factory-tested turn-key booster system
- 2,000 USgpm (125 L/s) at nominal pressures between 50 psi and 370 psi (2 bar to 25 bar)
- Working pressure - up to 400 psi (28 bar)
- Small footprint to fit through narrow doors (less than 34"/864 mm)

Typical Applications

- Schools and universities
- Residential (mid-rise and high-rise)
- Institutional (hospitals, Seniors residences, medical centers)
- Commercial (hotels, resorts, office towers, sports facilities)
- Municipal (water treatment, wastewater)
- Government (Military, Federal and Municipal buildings)

System Features

- Stainless steel Vertical MultiStage pump with #304 stainless casing (cast iron casings on some units)
- Fully integrated demand based control system with motor integrated drives
- NEMA premium efficiency motors (12.12/12.11)
- Industry-leading control features including:
  - SoftFill
  - No-Flow Shutdown
  - Pressure set-back
  - Emergency Power failure mode
  - Overload protection
  - Best-operating-point sequencing
  - 24-hour cycling of lead pump
  - End-of-curve protection
  - Built-in run/delay timers and run meters
  - High-pressure shutdown
  - Storage tank optimization
- Flexible PLC control platform with BAS
- communication in Modbus, Lonworks, BACnet (MS/TP) or BACnet (IP/NET) protocols
- NEMA/UL Type 12 panel enclosures
- Control features eliminate the need for system bypasses and pressure reducing valves
- Sturdy stainless steel base
- Grooved or flanged and NPT header inlet/outlet connections
- Inlet and outlet 4-20 mA pressure transmitters
- Header mounted 2½" (63 mm) liquid filled stainless steel pressure gauges
- Drives include dual D-link reactors to reduce input harmonics, eliminating the need for AC line reactors
- USB connection on drive allows systems to be remotely commissioned and monitored
- 3" - 4" headers standard stainless steel
- 6" - 10" headers standard cast iron

Available Options

- 7" (178 mm) HMI color touch screen controller
- 3"-10" (51-254 mm) flanged or NPT suction and discharge header connections
- 4-20 mA remote pressure transmitter
- ASME and Non ASME rated drawdown tanks
- NEMA/UL Type 3R and 4 panel enclosures
- Copper, galvanized steel, cast iron and stainless steel headers

Certification and Approvals

- ISO 9001 certified facility
- Panels UL508 labeled, CSA approved
- Systems UL/ULC certified/labeled
- AB1953, NSF-61-G compliant systems available
- CSA, UL/ULC certification on all electronics
- Factory test and report on every system

Design Envelope Booster Systems

What is Variable Speed?

Armstrong Intelligent Variable Speed (IVS) technology responds quickly to changes in system demand, and adjusts the pump speed so that the booster system outputs only the pressure and flow that a building actually needs at any given time. The energy savings realized from reduced operating speed can pay for the initial cost of the pump in less than a year.

Why Choose the Armstrong Variable Speed Booster System?

Energy and System Maintenance
- Reduces typical energy consumption by as much as 95% depending on suction pressure conditions
- Ability to provide a report detailing energy savings, payback, return on investment (ROI) and a comparison to competing systems

Increased Comfort, Protection and System Safety
- Security of Design Envelope (engineered system, right-sizing of equipment, maximum efficiency and compatibility of components)
- Design Envelope IVS technology responds quickly to changes in system demand
- Advanced control features
- Control is demand-based and prevents over pressurization
- UL, ULC, AB 1953, NSF-61-G compliant product available

Extended system life
- Cycling of lead pump ensures even wear
- SoftFill feature reduces pressure and shock strains on booster as well as piping components (water hammer)
- Pumps operate only when required

Superior Performance
- Fully integrated design provides maximum performance, energy efficiency and reliability
- Quickly responds to changes in incoming supply pressure
- Most efficient booster system currently available

Reduced Equipment, Installation and Commissioning Costs
- Right-sizing of initial equipment offers potential reduction in cost
- Lighter and more compact (smaller footprint) than most competitor systems
- Turn-key system installs quickly
- Vertical MultiStage pump design features allow for quick seal maintenance and service
- Flexible PLC control platform for easy integration with building management systems

Environmental
- Reduced water consumption
- Reduced energy consumption leading to reduced carbon footprint

ROI Booster Calculator

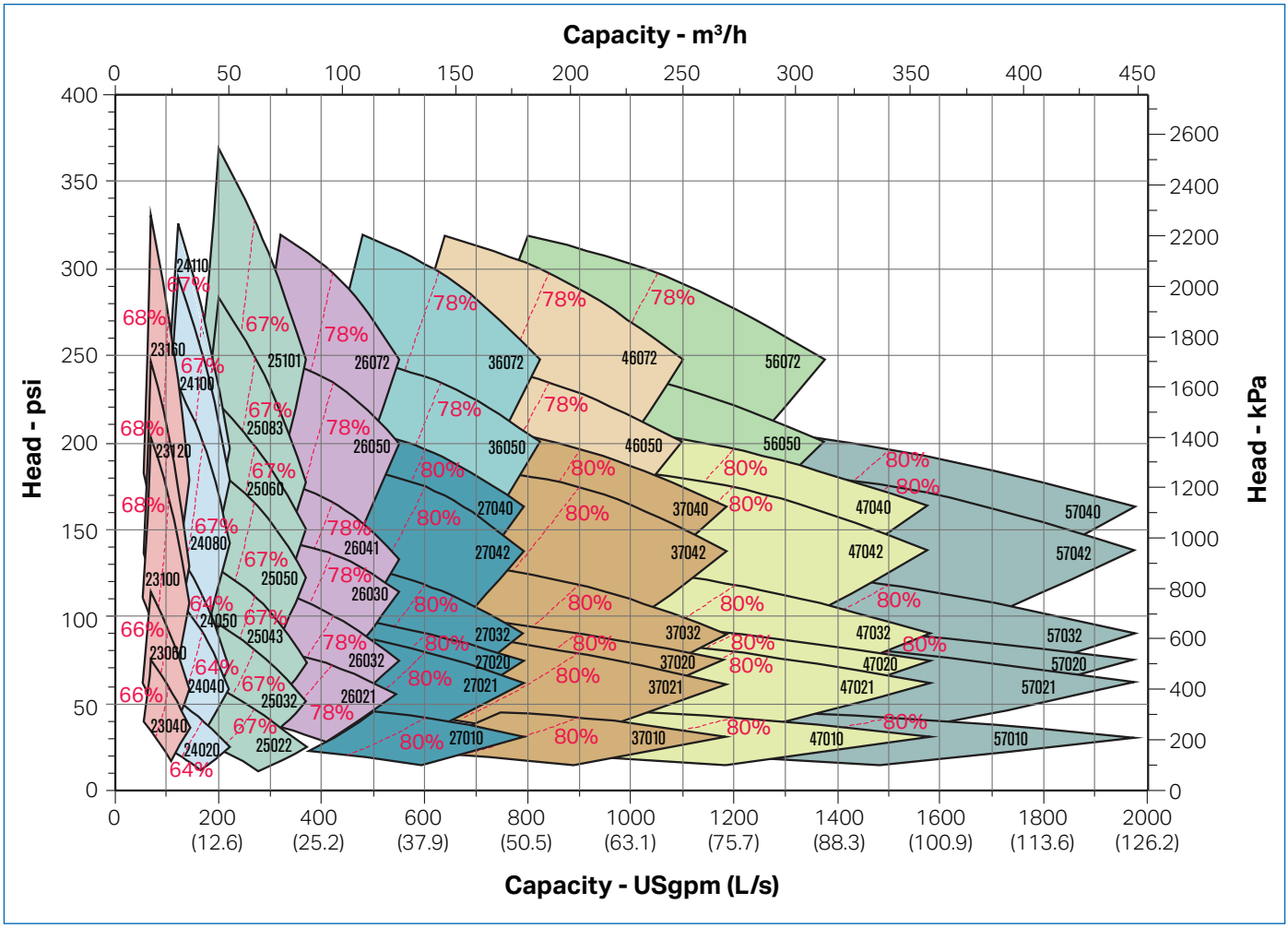
The Armstrong Design Envelope Booster calculator shows the financial benefits of installing an Armstrong Design Envelope booster system compared to an alternative constant speed or basic variable speed system. This calculator will guide your equipment selection and help you to make the best decision based on the requirements of your building. The comprehensive report details energy savings, potential rebates, payback period, ROI and a cost comparison to other systems.

Why Armstrong?

- Armstrong has a proven product offering and a history of great service to the HVAC industry
- Armstrong leads the market with innovative products
- Established sales/service network across North America
- Engineering and technical support capabilities
- In-house quality control and test capabilities (ISO)
- Full system design capabilities
- Full range of products (complete package)
- Online tools and resources
- Armstrong maintenance and extended warranty programs
- Project financing

Design Envelope

Armstrong Design Envelopes are a pre-set series of the most efficient pump selections for a given capacity range. The Design Envelope approach allows you to reduce your design risk and avoid costs from equipment change orders. By calculating your preliminary design conditions, and then selecting a Design Envelope with sufficient comfort zone around the preliminary design point, you can select a unit that allows for possible design omissions or system changes anticipated during construction and over the life of the building.



Series 6800 IVS Booster System Design Envelopes

Design Envelope Selection Procedure

- Mark your preliminary design flow and head requirements on the Design Envelope (DE) chart
- Choose the DE that best represents your design parameters, plus a safety margin in the flow and head to cover any anticipated increases or reductions in design demand from design errors or building modifications during construction
- Be assured that each DE selection retains the highest efficiency possible throughout the DE range
- Specify the DE model number from the chart, noting the flow, head and efficiency values at the Best Efficiency Point (BEP) value for your specification

Armstrong's ACE Online will also help you select the most appropriate DE unit using a similar process.

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